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Integrated review of the thematic cluster of agriculture, rural development, land, drought, desertification and Africa in small island developing States

Report of the Secretary-General

Summary

This report reviews the status of progress in small island developing States towards implementation of the Mauritius Strategy, with specific focus on agriculture, rural development, land, drought, desertification and Africa. The report is prepared in fulfilment of the mandate of the Commission on Sustainable Development at its thirteenth session, whereby a special one-day session on small island developing States will be convened by the Commission during its review sessions, to consider progress towards the sustainable development of small island developing States, within the framework of the thematic cluster under review by the Commission.

The report also describes continuing challenges which the small island developing States face in their effort to advance implementation of the Mauritius Strategy as a basis for consideration of the way forward.

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I. Introduction

1. It will be recalled that the Commission on Sustainable Development, at its thirteenth session, decided that it would devote one day of its review sessions to considering the status of implementation of the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, with specific emphasis on the thematic cluster of issues under review by the Commission.

2. In this regard, the present report has been prepared in pursuance of the Commission mandate that the Secretary-General submit to its review session a report outlining the progress, continuing challenges and constraints faced by small island developing States in their effort to achieve sustainable development, giving focus to the issues of agriculture, rural development, land, drought, desertification and Africa.

3. The report provides a comprehensive review and analysis of the efforts of small island developing States to address this thematic cluster of issues within the context of implementation of the Barbados Programme of Action for the Sustainable Development of Small Island Developing States, the Johannesburg Plan of Implementation and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, and relevant decisions of the Commission on Sustainable Development.

4. This report was prepared based on information taken, inter alia, from national data sources, reports of relevant United Nations specialized agencies, notably the Food and Agriculture Organization of the United Nations, the United Nations Conference on Trade and Development and the United Nations Environment Programme, from the assessments of regional intergovernmental and technical agencies, and from the inputs of major groups.

5. Review of the thematic cluster of issues is undertaken with full cognizance of their interdependent relationship in small island developing States, given their size, limited land and narrow natural resource bases, and the fragility and interdependence of their terrestrial and coastal ecosystems. It is impossible to consider the challenges in sustainable land management in small island developing States without taking into account the issues impacting rural development and agriculture. Similarly, the issues of drought and desertification are addressed integrally within the discussion on land, rural development and agriculture. It should also be noted that the challenges affecting Africa are taken into account within the context of the review of the ongoing challenges faced by the six African small island developing States. Such assessment is incorporated in the overall presentation.

6. Their structural and environmental vulnerability, exacerbated by the varied impacts of climate change, including the increased frequency and intensity of extreme weather events, are also addressed, given their direct influence on the thematic issues under review.

II. The Mauritius Strategy mandate

7. The Mauritius Strategy for the Further Implementation of the Programme of Action on the Sustainable Development of Small Island Developing States, adopted

in 2005, issued critical mandates to assure the attention of the small island developing States to and the support of the international community for measures to protect the land resources of small island developing States and to promote their prosperity through growth and trade in agriculture.

8. In this regard, the Mauritius Strategy invites the small island developing States to work with the international community to develop capacity for sustainable land management and self-generating agro-ecosystems and to strengthen land tenure and enhance land-use planning for crop, livestock and aquaculture production, taking into account increased competition for land resources resulting from tourism, urbanization and other activities.

9. The Strategy also addresses the promotion of agricultural competitiveness through the long-term development of efficient agricultural systems, diversification and value-added activities that ensure food security and self-reliance; specific trade and development-related needs with attention to marketing, product development and quality control and addressing urgent issues such as erosion of preferences and trade and food security; the development of capacity for trade facilitation and niche marketing in agriculture, forestry and fisheries products; improvement of infrastructure related to sanitary and phytosanitary measures; strengthening of technical and financial capacity for effective monitoring and control of fishing vessels and the sustainable management of fisheries.

10. Mandates for action include addressing the linkages between tourism and agriculture for promoting food supply chains, rural hospitality and agrotourism; developing sustainable forest management practices and the implementation of measures to protect against invasive alien species; the strengthening of policy and legislation formulation in the mining sector; and the promotion of research and implementation of modern technologies for more effective management of land resources. Small island developing States have taken steps to address some of these mandates.

11. A summary account of these efforts is given below.

III. Sustainable land management

A. Impact of population growth and development

12. Effective land management remains a central and increasingly important challenge faced by all small island developing States. Small in land size with only a few exceptions, small island developing States must balance the competing demands for use of their limited land resources brought on by expanding economic activities, burgeoning population growth, and ever-increasing demand for human settlements. This challenge is greatest in the coastal areas where the principal economic activities in small island developing States are concentrated, and where by corollary the majority of populations live. The movement of rural labour in search of more productive, urban-based employment has also been a dominant demographic trend in nearly all small island developing States. In the Atlantic, Indian Ocean, Mediterranean and South China Sea countries, annual urban growth rates often exceed 2 and 3 per cent, while annual rural growth rates have generally declined to under 1 per cent. Similar trends are also found in the Caribbean, where rural growth

rates are negative. In the Pacific Islands, urban demographic expansion is outpacing population growth in rural areas and in the outer islands.[1] This demographic shift has increased the need for urban housing, services and infrastructure. The topography of small island developing States, which are more mountainous in the interior and tend to have most of their flat, arable land along the coastal strip, encourages these demographic trends.

13. Both land and marine ecosystems along small island developing States coasts have thus been faced with increasing stress from growing human settlement demands and from the impact of expansion in the agriculture, fisheries and tourism industries, in particular. In many coastal areas, industrial development and growth in hotels and other tourism-related services have outstripped local capacity to provide municipal services. This has increased demand for more effective solid waste management, due in part to the rising incidence of improper municipal and industrial waste disposal and the dumping of untreated sewage in coastal waters. Untreated sewage, agricultural runoff and industrial waste are acknowledged to be principal causes of nutrient pollution of small island developing States coastal waters.

14. As competition for land space has grown, there has been increased encroachment on still more ecologically sensitive and disaster-prone areas, such as the marginal lands on steep hillsides in the hinterland of major coastal towns. Such growth is often unplanned, taking the form of squatter communities lacking municipal infrastructure. The inappropriate clearing of these hillsides for housing, quarrying, cultivation and fuel has resulted in increased rates of deforestation and watershed degradation, which have in turn accelerated soil erosion and increased the instability of these lands. Heavy siltation of rivers during rainfall, decline in soil fertility and increased incidence of landslides are among the constant reminders of deforestation and watershed degradation in small island developing States. Land degradation is severe in some small island developing States. It is estimated that Haiti loses 36 million tons of soil each year,[2] while Nauru reports nearly 70 per cent of its land space degraded by phosphate mining.[3]

15. These challenges are rendered even more complex when taking into account the size of these Member States; inland and coastal ecosystems are in such close proximity that their needs must be addressed in an integrated manner. For instance, topsoil run-off carries agricultural chemicals and pesticide residue into coastal waters via rivers, while polluted groundwater from inappropriate sewage and waste disposal also empties into the sea, contributing to eutrophication of coastal waters and to the loss of coral reefs and marine life.

16. Such circumstances negatively impact the quality of life of small island developing States communities. On Upolu Island in Samoa, for example, recorded declines in inshore fish catches have been linked to sedimentation of reefs as a result of deforestation and watershed mismanagement.[4] The health and environmental impacts of agro-chemical, sewage and industrial effluents on soils, potable water and food supplies are also significant. In Mauritius, average annual use of fertilizer has been estimated at 600 kilograms per hectare, more than five

[1] *World Urbanization Prospects: the 2005 Revision Population Database.*

[2] Haitian Country Report to FAO (2001).

[3] Nauru (2003), first national report to United Nations Convention to Combat Desertification.

[4] UNEP (2004c).

times the world average of 113 kilograms per hectare.[5] This significant exposure to agrochemicals has resulted in contaminated run-off and compromised aquifers, soils and coastal waters.[6]

B. Other factors impacting land quality

17. Deforestation rates are also high in some small island developing States. Decline in the coverage as well as the quality of forests has undermined their natural capacity to buffer against extreme weather events, and the lack of vegetation cover has increased the severity of natural disasters. Landslides and floods, which killed over a thousand Haitian nationals following heavy rains in 2004, typify the vulnerability of small island developing States in this regard. The growing frequency and severity of hurricanes and cyclones in small island developing States regions has also increased the need for risk management, particularly for housing built on unstable lands.

18. Land degradation also threatens biodiversity conservation in small island developing States. It is estimated that in Cape Verde, a country with high levels of land degradation, 10 out of 28 indigenous species have been lost to desertification.[7] In many Caribbean countries, marine biodiversity is increasingly endangered by coastal development and mangrove destruction. In the Pacific, the clearing of indigenous vegetation has made some States more vulnerable to invasive species, which are now a significant driver of population declines and species extinction in small island developing States, bringing direct and indirect harm to the environment, human health and the economies of these States. Examples include fire ants in the Caribbean and the golden apple snail in the Pacific, both harmful to humans; the displacement of 60,000 sooty terns, a premier attraction on Bird Island in Seychelles, by the yellow crazy ant; and agricultural losses in Grenada valued at some $18.3 million from damage caused by the pink hibiscus mealybug.

19. The integrated management of agricultural lands, forests and trees outside forests to protect land, coastal areas, freshwater resources and biodiversity has increased the resilience of small island developing States to storms and high tides. Many small island developing States have also incorporated disaster planning into their natural resource management schemes. In the Caribbean, a comprehensive disaster management framework to guide planning and decision-making at the national level was prepared by the Caribbean Disaster Emergency Response Agency, which offers technical support for disaster management planning for countries in the region. Many of its member States have begun implementation of capacity-building initiatives to integrate disaster management into land management and development planning processes.

20. Deforestation and inappropriate land use practice in small island developing States has also adversely affected groundwater recharge and water retention capacities of soils, directly contributing to the loss of rivers, decreased rainfall, watershed degradation and decline in freshwater sources. Conversion of forestlands has threatened the sustainability of food security in many countries. Topography and climactic factors also influence the susceptibility of small island developing States

[5] Indian Ocean Commission (2004).

[6] UNEP (2004a).

[7] UNDP; see http://www.undp.org/gef/05/portfolio/writeups/bd/capeverde.html.

to drought and to desertification. Some countries, like Barbados, Cape Verde, Kiribati and Tuvalu, have chronically limited freshwater resources, low annual rainfall and shallow water tables. Water management programmes that promote capture and storage, conservation, and sustainable use, especially for agriculture, have been integral to meeting local water needs for both domestic and commercial use. Some of these Member States have been working to develop and implement comprehensive water management strategies that include technologies for improving irrigation, groundwater extraction and rainfall catchment.

21. Climate change has also had substantial impact on the health of small island developing States coastal ecosystems. Warming seas have resulted in widespread death of reefs due to coral bleaching. Substantial beach erosion from both reduced reef protection and from sea level rise has thus brought increasing loss in coastal land space. In the case of low-lying small island developing States such as the Maldives, Marshall Islands and Tuvalu, the threat of total submersion of land area from rising sea levels is very real.[8] As recently as January 2008, King Tides rising to three metres washed across the islands of Tuvalu, whose highest point is just over 4.5 metres.[9] Salt-water intrusion in the freshwater aquifers of Pacific small island developing States is an increasing phenomenon. There have also been several reports of increased soil salinization in small island developing States across all regions. These trends seriously impact soil fertility, the productivity of land resources and food security.

C. Integrated land planning and management

22. Small island developing States have been giving increased attention to the implementation of policies in an effort to address challenges associated with rapid urbanization and with the expansion of tourism activities, often on prime agricultural lands. There is need for a more centrally coordinated approach to zoning, urban planning and service provision, and for integrated rural development plans, to retain land for agricultural use, and for environmental watershed protection schemes. Land tenure systems vary considerably among small island developing States regions. In the Pacific, the laws and institutions governing land management and rural development are closely linked with local culture and custom. Land stewardship is guided largely by tradition, religion and a variety of indigenous practices. Local chiefs and officials and leaders of extended family groups and of villages have primary responsibility for the development of customary lands. More than 80 per cent of Pacific small island developing States lands are owned on the basis of customary law, with a much smaller proportion of territory administered at the national level. Many Pacific small island developing States are thus exploring more decentralized land administration systems, the institution of local land courts, and technology-driven registration systems.[10] Still, very few have developed land use policies, and land tenure conflict is a continuing challenge.

23. In the Caribbean and Atlantic, Indian Ocean, Mediterranean and South China Sea regions, attention is being given to land distribution issues through policy

[8] UNEP (2004a).

[9] Shuckman, David (2008).

[10] Country reports prepared for the FAO/USP/RICS Foundation South Pacific Land Tenure Conflict Symposium, 10-12 April 2002; http://www.sidsnet.org/pacific/usp/landmgmt/SYMPOSIUM/.

reform. There is acknowledged need for effective land registration systems, to reduce the challenges related to titling and ownership. Caribbean leaders, in the context of their regionally agreed programme to revitalize agriculture, termed the Jagdeo Initiative, committed to taking steps to assure the poor better access to land resources.[11] Many States are exploring the use of information-based technology such as geographic information systems, to support more solution-based analysis and decision-making in respect of spatial planning, and to ensure optimum use of lands. Preparation or review of land reform policy is being undertaken in a number of States, including Jamaica, Saint Vincent and the Grenadines and Seychelles; a watershed management policy has been introduced in Haiti.

24. National decision-making and the capacity to manage land resources sustainably in small island developing States would benefit from appropriately trained personnel in such fields as physical and urban planning, and spatial data mapping and planning. Most small island developing States are also constrained by weak institutional capacity and inadequate legislative and regulatory frameworks for coordinated management and monitoring of their land resources. These are challenges to be overcome if there is to be improved access to information on land resources and appropriate tools, best practices and technologies for implementing sustainable land-use options and making informed policy decisions.

IV. Rural development

25. Rural development is integral to sustainable development in small island developing States, since the majority of these States, notwithstanding their respective levels of development, continue to rely heavily on the rural sector for the provision of income, employment and food security for their populations. Table 1 shows the importance of the agricultural sector to employment in selected small island developing States. In the Atlantic, Indian Ocean, Mediterranean and South China Sea and Pacific regions, between 30 and 80 per cent of the total population live in rural areas, relying mainly on agriculture, forestry and fisheries for their livelihood. Agriculture is the predominant productive sector for most of these States, accounting for 20 to 40 per cent of gross domestic product, over 50 per cent of exports and 40 to 80 per cent of employment opportunities. Fishing has been a particularly important source of income in the Atlantic, Indian Ocean, Mediterranean and South China Sea and Pacific regions. In the Federated States of Micronesia, Maldives, Seychelles and Tuvalu, for example, fisheries exports comprise over 90 per cent of agricultural exports.[12]

[11] Caribbean Regional Agriculture Policy Network; see http://www.carapn.net.

[12] FAO FishStat (2004).

Table 1
Percentage of workforce employed in agriculture, industry and service sectors: selected small island developing States

	Percentage		
Country	*Agriculture*	*Industry*	*Services*
Antigua and Barbuda	2.60	14.60	74.60
Barbados	3.30	17.30	69.70
Cuba	21.20	19.40	59.40
Dominica	21.00	22.00	58.80
Dominican Republic	14.60	22.30	63.10
Grenada	13.80	23.90	58.60
Guyana	27.90	22.60	47.90
Haiti	50.50	10.80	38.70
Jamaica	18.00	17.70	64.10
Mauritius	10.00	32.40	57.40
Papua New Guinea	72.30	3.60	22.70
Sao Tome and Principe	27.90	19.20	52.40
Saint Lucia	11.40	17.70	56.10
Saint Vincent and the Grenadines	15.40	19.60	60.60
Trinidad and Tobago	4.30	31.00	64.30

Source: ILO, Key Indicators of the Labour Market; see http://www.ilo.org.

26. The Caribbean small island developing States economies are dominated by the service sector, particularly tourism, banking and finance, with incipient industrial development. The rural sector in this region includes a greater contribution of non-agricultural economic activity, including tourism, mining and oil drilling, as well as commercial micro-enterprises and cottage industries linked to the tourism sector. This diversity notwithstanding, the contribution of agriculture to the gross domestic product in the Caribbean ranges from 3 per cent in Trinidad and Tobago to 31 per cent in Guyana, employing as much as 66 per cent of the workforce in the case of Haiti.

27. Poverty is a predominantly rural issue in small island developing States. The agricultural sector in most small island developing States is characterized by a combination of large-scale commercial production of export crops and a small-scale sector which produces food crops primarily for local consumption. The rural poor tend to be subsistence and small farmers, women and artisanal fishers, for whom the agriculture sector remains a primary source of income and food security. Factors such as inadequate physical infrastructure and services, limited access to technological and financial resources, vulnerability to natural disasters and economic shocks have served to retard the development of rural economies in small island developing States.

A. Challenges to rural development

28. The erosion of preferential trade arrangements on major export products like sugar and bananas as well as repeated devastation by hurricanes and cyclones in the Caribbean and the Pacific have resulted in significant contraction of the agrarian sector and the undermining of rural development in countries like Dominica, Fiji, Grenada and Saint Lucia. Subsistence farming has also taken its toll on the forestry sector, particularly in the small island developing States which are also least developed countries where there is heavy demand for wood fuel and land for cash crops. Recorded deforestation is highest in the Comoros and Haiti.

29. Rapid population growth and youth disenfranchisement are increasing challenges in the rural sector. In the Pacific, nearly 40 per cent of the rural population is below the age of 15, and job creation has not kept pace with population growth.[13] Access to land is also a major concern. Historically, subsistence farmers have had access only to marginal lands, and generations of informal land ownership have resulted in land titling difficulties, undermining the ability of subsistence farmers to access loans for small farm development. These are problems disproportionately faced by women, who represent the greater proportion of the rural poor. This is of particular concern given the rising level of female-headed households in small island developing States. More attention is therefore being given to programmes to enhance employment opportunities for women and youth in rural areas. Programmes that provide micro-credit to women raise employment and living standards for families and in some cases effect change for entire rural communities.

30. The multi-island character of most small island developing States in the Atlantic, Indian Ocean, Mediterranean and South China Sea and Pacific regions adds a unique dimension to the challenge of rural development. The quality of life for populations on remote outer islands is of particular concern, because distance renders the delivery of services more difficult and expensive, thus inflating costs associated with strengthening the rural economy. It is estimated, for example, that 70 per cent of the Pacific small island developing States populations do not have access to modern energy services and that, as a group, they pay between 200 and 300 per cent above global market prices for fossil fuel. These are burdens that fall heavily on the rural poor.[14] Physical dispersion also makes the delivery of other basic services such as health care very difficult, and access to markets for trade more expensive. These challenges have contributed substantially to increasing trends of rural-urban drift in small island developing States.

31. There has been increasing attention given to strengthening agro-industry and the non-agricultural productive activities in the rural sectors of small island developing States as part of the overall strategy to promote rural development. For a few small island developing States, mining operations have contributed meaningfully to the rural economy. Papua New Guinea has porphyry-copper, silver and gold mines; Fiji is endowed with large porphyry-copper deposits and two gold mines; the Solomon Islands recently opened its first gold mine.[15] Bauxite and alumina are principal exports of Jamaica and Guyana. Quarrying for the production

[13] World Bank, Rural Development and Agriculture in Pacific Islands.
[14] Department of Economic and Social Affairs (2006).
[15] UNEP (2004c).

of industrial minerals and construction material, including limestone, gypsum, marble, sand and gravel also contributes to non-agricultural rural income in small island developing States across all three regions. In the case of Trinidad and Tobago, and more recently Timor-Leste, the rural economy continued to be dominated by the oil industry.

32. Mining, while a key contributor to economic growth in small island developing States, also causes physical dislocation and environmental degradation in rural areas. Much attention has been given to the implementation of policies to ensure the rehabilitation of mined lands and the resettlement of displaced landowners. Where governance issues and resource constraints have limited enforcement and land rehabilitation, mining has accelerated degradation and increased pollution.

B. Scope for growth in the rural economy

33. Tourism is a major industry linked to the rural economy because of the ecotourism subsector. However, many small island developing States do not treat it as such because of its primary locus on the coasts, and its role as the principal driver of coastal urbanization. Indeed, in the Caribbean it is the tourism industry that influences the significant movement of labour from the rural areas, attracting women and youth in particular, in search of more productive employment in the service industries. The increased migration of labour to cities and coasts is both a symptom and a cause of sluggish rural development. Recent contractions in the agrarian sector, due mainly to the loss of preferences, falling commodity prices, and natural disasters, have also contributed to this demographic shift.

34. Governments of the respective regions have committed to taking necessary steps to revitalize and strengthen the rural economies of small island developing States, with a view to reducing rural poverty and stemming rural-urban migration. It is acknowledged that for rural prosperity to increase, attention must be given to the implementation of appropriate policies and strategies directed to the most vulnerable groups of the rural economy. These should include skills training to expand participation in both agricultural and rural non-agricultural activities, particularly those with strong market linkages to both the tourism and agricultural sectors, such as micro-industries in handicrafts, fish and food packaging. Support for diversification of the agriculture sector into areas like horticulture, which finds a ready market in the tourism industry as well as for export, is also being provided. Among the challenges to be addressed are facilitation of access to innovative technologies to strengthen production, processing and marketing systems; the modernization and expansion of agricultural services to improve productivity; the development of institutional capacity in agricultural and rural organizations; promotion of intersectoral linkages, and improvement in rural infrastructure and services.

V. Agriculture

35. The rehabilitation, strengthening and diversification of the agriculture sector, within the context of the promotion of rural development and rural prosperity, and enhancement of the quality of life, remains a central objective of small island

developing member States. Land resources in small island developing States devoted to agriculture are shared between subsistence small farms and larger-scale commercial systems, producing mainly for export. The larger tracts of more productive agricultural lands are typically dominated by commercial agriculture in those small island developing States whose land use was historically shaped by their mono-crop plantation economies. In these commercial systems, found in many small island developing States, including Cape Verde, Cuba, Dominican Republic, Fiji, Grenada, Jamaica, Mauritius and Saint Lucia, production is concentrated on a few primary commodities, notably bananas, sugar cane, coffee, coconuts, cocoa and spices. This land-use tradition continues even today, with agriculture continuing to serve as a major contributor to economic growth and rural development in small island developing States (see table 2). In Mauritius, sugar cane plantations still cover nearly one half of the island's land area.[16]

Table 2
Arable land and permanent crops as a percentage of total land area: selected small island developing States[17]

Country	*1961*	*1981*	*2001*
Dominica	21.3	22.7	26.7
Dominican Republic	20.8	29.6	33.0
Fiji	8.4	9.9	15.6
Grenada	55.9	44.1	35.3
Jamaica	25.5	21.2	26.2
Mauritius	45.8	52.7	52.2
Saint Kitts and Nevis	44.4	36.1	22.2
Saint Lucia	23.0	27.9	29.5

Source: FAOStat; see http://faostat.fao.org/.

36. High percentages of land under cultivation may also be indicative of widespread small-scale and subsistence agriculture in small island developing States. Subsistence small farming, usually conducted on plots of fewer than two hectares, more often on marginal lands, and typically employing family labour, produce mainly to meet local and family needs. Main crops are usually roots and tubers, food and fruit trees outside forests, including breadfruit and citrus. Subsistence farming often also includes small-scale livestock, pig and poultry production. Subsistence agriculture plays a vital role in the economy, nutritional status and social well-being of the rural poor in small island developing States. In many Pacific small island developing States, these traditional systems provide over 90 per cent of the rural domestic market.

[16] Indian Ocean Commission (2004).

[17] Arable land: land under temporary crops, land under market and kitchen gardens and land temporarily fallow (less than five years).

A. Fisheries

37. The fisheries sector is deserving of special mention because of its central role in the economic life of coastal communities and its critical contribution to nutrition and food security in all small island developing States. Fishing is especially big business in the Pacific. There, the fisheries sector is often classified by scale of operation: industrial; small-scale commercial; and subsistence fisheries. Pacific small island developing States benefit from deep-sea industrial fisheries primarily due to the licensing fees collected from distant fishing nations. However, it is from subsistence coastal fishery resources that Pacific islanders gain significant economic and nutritional benefit.

38. It is estimated in some Pacific small island developing States that over 80 per cent of all coastal catch is consumed in the subsistence sector, particularly in rural areas. All small island developing States regions are actively engaged in commercial coastal fisheries for export income. Fisheries exports have expanded consistently across all small island developing States subregions. In both the Caribbean and Pacific, exports have increased by approximately 40 per cent since 1990. The sustainable management of fisheries has thus become increasingly urgent, as the demand for both subsistence and commercial fishery products have raised the incidence of overfishing.

B. Agricultural production and trade

39. The importance of the sector notwithstanding, agriculture has been in decline in small island developing States for the past two decades. Unsustainable agricultural practices, including extensive land clearing, intensive land use, mono-cropping, reduced fallow periods, as well as the impact of climate change and natural disasters have all contributed to increased land degradation and decreasing productivity of agricultural systems.

40. Most significant, however, has been the sector's vulnerability to economic shocks. The value of total small island developing States commodity exports has declined considerably, both absolutely and by percentage of exports in world agricultural exports. Sugar and banana exports have declined in both volume and value. In the Organization of Eastern Caribbean States, banana production and exports have declined sharply due to the erosion of trade preferences. Historically, small island developing States have received preferential agricultural market access under a number of bilateral, non-reciprocal agreements, the most important being the European Union/African, Caribbean and Pacific Lomé Agreement. Small island developing States also receive preferences under regional agreements, such as the Caribbean Basin Economic Recovery Act. All small island developing States, as well as all other developing countries, benefit from the Generalized System of Preferences. Some small island developing States also benefit from preferences under the recently introduced EU/Everything But Arms scheme and the United States/African Growth and Opportunity Act framework. Within these arrangements, the commodities of greatest importance to small island developing States have been sugar, bananas and rice.

41. Under the World Trade Organization trading regime, preferences such as those granted in the EU/African, Caribbean and Pacific Lomé Agreement were

disqualified. The EU preferences to African, Caribbean and Pacific countries have thus been sanctioned by a time-limited waiver, pending the conclusion of EU/African, Caribbean and Pacific Economic partnership agreements. Economic partnership agreements are intended to spur development and preserve the special status of African, Caribbean and Pacific countries in accordance with World Trade Organization regulations. Until recently, substantial benefits accrued to small island developing States through these agricultural trade preferences. By one estimate[18] small island developing States received an estimated $600 million annually in preference value in the context of the EU/African, Caribbean and Pacific framework. By commodity, sugar, fish and bananas account for about 90 per cent of the preference value, with sugar claiming nearly 80 per cent of this. The reform of the EU-African, Caribbean and Pacific Sugar Protocol and other preferences has therefore had serious impact on the agriculture sector in a number of small island developing States. The sugar-reliant economies of Fiji, Guyana, Jamaica, Mauritius, Seychelles, and Trinidad and Tobago, which absorb 90 per cent of EU preferences, have been particularly hard hit, while the banana exporters, namely, Dominica, Jamaica, Saint Lucia and Saint Vincent and the Grenadines, have also witnessed sharp declines in preference values.[19]

42. The viability of small island developing States agricultural exports have also been affected by other external economic factors. Over the last 20 years, commodity prices for bananas, sugar, cocoa and copra have declined. The combination of preference erosion, increasing competition falling commodity prices and unfavourable exchange rates has coincided with the contraction of the sugar, banana, rice and coconut industries in small island developing States. These trends have had real implications, especially in those economies that have been narrowly focused around the export of these agriculture products.

(a) Bananas

43. Cuba, Dominican Republic, Haiti, Jamaica, Papua New Guinea and Saint Lucia together account for approximately 80 per cent of the small island developing States' banana production, which is about 3 per cent of the global market. Compared to their competitors, small island developing States fruit are grown on small holdings and subject to higher production and transportation costs. As a result, the small island developing States economies most dependent on bananas, namely Dominica, Saint Lucia, and Saint Vincent and the Grenadines, have significantly reduced production. This has had serious repercussions, particularly in Saint Lucia, where in 2002, bananas were 50 per cent of agricultural output and 60 per cent of total exports. Production and exports have also declined across the Windward Caribbean islands and Jamaica. However, the Dominican Republic, the largest Caribbean exporter, has steadily increased exports since the 1990s after joining ACP[20] (see table 3).

[18] FAO (2005).
[19] Ibid.
[20] Ibid.

Table 3
Banana production, selected small island developing States
(Volume in thousands of tons)

Country	*1990*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*
Barbados	0.75	0.52	0.55	0.57	0.60	0.64	0.66
Cuba	195.00	265.59	318.06	206.90	315.40	454.20	289.01
Dominica	66.71	33.50	25.00	23.00	19.00	14.45	10.32
Dominican Republic	395.10	343.31	442.01	502.88	514.95	468.32	547.43
Grenada	12.00	4.05	4.10	4.10	4.10	2.12	0.99
Jamaica	127.66	102.00	108.00	109.00	115.00	108.36	105.70
Mauritius	6.14	8.50	11.00	7.20	12.09	12.00	11.58
Saint Vincent and the Grenadines	82.73	46.00	46.00	46.00	50.00	45.00	50.00
Samoa	14.00	20.00	20.00	21.50	21.50	23.09	24.28
Vanuatu	11.40	13.00	13.00	13.50	14.30	13.98	14.04

Source: FAOStat.

(b) **Sugar**

44. Similarly, sugar production declined in almost all the economies under consideration, with only Belize, Guyana and Papua New Guinea reporting greater output. This downward trend is also due to the loss of preferences; a price crash in 1998 that strongly impacted the Dominican Republic; droughts and cyclones that hit Mauritius in 2000; and political instability in Fiji[21] (see table 4).

Table 4
Sugar production, selected small island developing States

	Average production (volume in thousands of tons)			*Annual average growth rate (percentage)*	
Country	*1990-1992*	*2000-2002*	*Percentage change*	*1996-2000*	*2001-2002*
Barbados	67	53	-21	2	-7
Belize	98	116	18	1	-3
Cuba	7 740	3 818	-51	0	0
Dominican Republic	710	469	-34	-10	0
Fiji	413	325	-21	-7	0
Guyana	164	291	78	2	4
Jamaica	217	201	-8	-3	1
Mauritius	612	544	-11	-1	2

[21] Ibid.

Country	Average production (volume in thousands of tons) 1990-1992	2000-2002	Percentage change	Annual average growth rate (percentage) 1996-2000	2001-2002
Papua New Guinea	34	46	35	5	-3
Trinidad and Tobago	106	97	-9	-4	4
Other small island developing States	89	85	-4	12	2
Total	**10 215**	**5 998**	**-41**	**-1**	**0**

Source: FAO (2005a) and FAOStat.

(c) Rice and coconut/copra

45. Rice and coconut production in small island developing States have fluctuated over the last decade. Between 1990 and 2001, Cuba, the Dominican Republic and Guyana expanded rice production, whiie Fiji, Guinea-Bissau, Haiti and Suriname saw declines due to falling yields, bad weather and political instability. Table 5 shows the variability in coconut and copra production over the last 15 years. In the Pacific region, the high cost of transport and processing has slowed the growth of coconut industries, which have otherwise contributed greatly to rural development, especially in the smaller islands and atolls.

Table 5
Coconut and copra production, selected small island developing States

Country	Production of coconuts and copra (volume in thousands of tons) 1990	2000	2005
Barbados	1.5	1.6	2.0
Comoros	63.7	74.1	80.5
Cuba	25.0	80.2	113.8
Dominica	11.3	11.4	10.9
Dominican Republic	154.7	140.0	107.5
Fiji Islands	251.3	170.6	140.1
Grenada	7.7	6.5	6.0
Guinea-Bissau	37.0	45.5	48.1
Guyana	38.7	78.6	66.1
Jamaica	77.7	170.0	198.7
Kiribati	58.8	96.0	109.8
Maldives	12.7	15.7	15.8
Mauritius	2.3	1.5	1.7
Saint Vincent and the Grenadines	20.0	2.1	2.6
Samoa	138.0	140.0	152.8
Sao Tome and Principe	31.0	25.5	26.3
Seychelles	6.7	3.2	2.5

	Production of coconuts and copra (volume in thousands of tons)		
Country	*1990*	*2000*	*2005*
Solomon Islands	180.0	246.0	276.0
Trinidad and Tobago	40.0	23.2	10.6
Vanuatu	356.8	248.0	315.0

Source: FAOStat.

C. Scope for diversification

46. The downward trend in the production and export of principal agriculture products has had real implications for development in small island developing States, where agro-industries are an economic lifeline. In response, many small island developing States have been dedicating their resources to negotiating a new path forward in order to diversify and revitalize their rural sectors.

(a) Biofuels

47. Some countries have been working to develop their capacity for biofuel production, with the aim of servicing local and growing international demand for alternative fuels. Mauritius, a leading sugar producer, is drafting legislation to support research into and implementation of biodiesel made from sugar, soya, palm, coconut and vegetable oils, as well as jatropha curcas.[22] Similarly, in the Caribbean, Cuba, Dominica, Dominican Republic and Jamaica, for instance, are reviewing the viability of their agriculture sectors to produce ethanol from sugar cane, as well as other biofuels. In the Pacific, declining global commodity prices coupled with the increasing price of fossil fuels have also encouraged biofuel exploration in the region, with countries such as Fiji, Papua New Guinea, Samoa, Solomon Islands and Vanuatu initiating pilot projects. Ongoing research regarding the viability of this industry will address questions having to do with its possible impact on food security and its comparative advantage over traditional exports of raw agro-products.[23]

(b) Agro-tourism

48. Small island developing States have also been working to strengthen the resilience of their rural industries by forging links between the agricultural and service sectors. The Caribbean has been particularly active in this regard, instituting programmes to use locally harvested produce in hotel restaurants and implementing agro- and adventure tourism initiatives that enhance tourism revenue in the remote rural areas. Festivals, health or wellness-oriented tourism programmes, and the creation of inland nature parks and gardens all provide good opportunities for marketing local agricultural and rural products. The development of cottage industries to promote the sale of local crafts and medicinal items often benefits the rural, small and medium-sized business owners and women that produce the value-added products for distribution.

[22] Mauritius Ministry of Environment (2007).

[23] SOPAC (2007).

Case study

Communities in the Marshall Islands are exploring the use of cooperative business models to develop and service a niche market in sea cucumbers.

Sea cucumbers are a highly valuable export commodity, especially in Asia where they are considered of great gastronomic and medicinal value. They can also be raised in a sustainable and inexpensive way, using traditional canoes and without the requirement of nets, fences or added food supplies.

Certain communities in the Marshall Islands are uniquely positioned to pursue this market, and are engaging in public-private partnerships to establish sustainable sea-cucumber aquaculture as well as the business infrastructure necessary to meet international demand for this marine product. The initiative is an excellent example of a successful partnership between government, the private sector and local communities.

(c) Niche markets

49. Many small island developing States are also focusing on the development of niche markets and value-added products to reinvigorate rural industry. Some of the markets and products being pursued include organic produce, medicinal plants and herbs, new types of juices, boxed and canned goods, spices, oils, crafts, music and rum. In the Pacific, some countries are researching the potential for developing value-added export products from local crops, such as taro and the noni fruit, which is valued for its medicinal properties. In the Atlantic, Indian Ocean, Mediterranean and South China Sea region, the Comoros is one of the world's largest producers of vanilla and ylang-ylang, used in perfumes; Sao Tome and Principe is known for its cocoa production. Other products such as honey, rum and essential oils are also produced across the small island developing States, many of which are working to establish the medicinal, health, and culinary significance of their value-added products in international markets.

D. Improving food security

50. In addition to enhancing the rural development, such programmes also have the potential to increase food security in small island developing States by expanding the agriculture sector and encouraging diversification into a wider array of fruits and vegetables consumed by tourists. Small island developing States currently import more than 50 per cent of their daily caloric intake, and since the 1990s, they are increasingly less able to afford this expenditure.[24] The rates of malnutrition in many small island developing States have declined over the last 30 years, but remain unacceptably high in some countries, such as Comoros, Dominican Republic, Guinea-Bissau, Haiti and Solomon Islands. It is estimated that

[24] FAO (2005).

the establishment of effective intersectoral linkages between agriculture and tourism would dramatically reduce a country's food import bill, while giving agriculture a greater stake in the national economy.[25]

VI. Regional and international cooperation

51. The small island developing States have received substantial assistance from their respective regional intergovernmental and technical organizations and from relevant agencies of the United Nations system, in support of their effort to promote agricultural development and rural prosperity while protecting their land resources.

52. Regional intergovernmental organizations have provided critical human capacity, resources and assistance to small island developing States in identifying and addressing challenges to rural development, especially through trade promotion. In the Pacific, programmes such as the Pacific Islands Country Assistance Strategy and the Pacific Engagement Framework have identified major strategic priorities including safeguarding service delivery by improving resilience to natural hazards; enhancing sustainable revenues from resource-based sectors; providing an enabling environment for private sector investment; improving access to regional markets; and improving the quality of health and education and fighting HIV/AIDS.[26] In the Caribbean, the Regional Transformation Programme for Agriculture is designed to facilitate transformation of the agricultural sector, increasing its competitiveness.

53. Since the adoption of the Mauritius Strategy in 2005, the Ministers of Agriculture of the Pacific and Caribbean and the Caribbean Community (CARICOM) Heads of Government have endorsed the expansion of the Regional Programmes of Food Security in small island developing States. Initiated in 2003, these programmes are intended to increase the productivity of small farmers and to improve their market access at the regional and international levels. The expanded programme is addressing development constraints in the rural sector through investments in rehabilitation and construction of rural infrastructure, including water management, crop storage and processing. The programmes will also provide policy and technical assistance that address limitations in market access to food as well as disaster preparedness, management and mitigation. The scaling up of the Regional Programmes of Food Security will engage a broad range of ministries, civil society, private sector organizations and the donor community in activities to build synergies with other initiatives and ensure coherence with existing strategies, including the Millennium Development Goals, Poverty Strategy Reduction Papers and national development frameworks.

54. CARICOM has committed to supporting a series of interventions for strengthening agriculture for sustainable growth and development, known as the Jagdeo Initiative, after President Bharrat Jagdeo of Guyana. The Initiative targets the repositioning of agriculture, no later than 2015, in a manner that contributes to national and regional development and to economic, social and environmental sustainability, and that enables the region to achieve an acceptable level of food security. It was proposed that the Initiative be pursued in tandem with the Regional Programmes of Food Security, with the full support of FAO.

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[25] Ashley and others (2006).

[26] World Bank, Rural Development and Agriculture in Pacific Islands.

55. Support is also being provided to small island developing States within the framework of the FAO Plan of Action on Agriculture in Small Island Developing States. Priority is given, inter alia, to creating an environment for agricultural diversification, pursuing policies to improve production and productivity; to developing trade and marketing policy frameworks; to developing agroforestry and organic agriculture, to improving marketing and processing by establishing food quality control and to reducing post-harvest losses. Successful projects include the re-establishment of Samoa's staple, taro, through propagation of varieties tolerant to leaf blight; the strengthening of banana production in the Maldives; development of an integrated pest management policy in Trinidad and Tobago, and the development of agro-tourism linkages in Antigua and Barbuda.

56. Regarding capacity-building to strengthen food security at the national level in the Pacific, FAO, through its subregional representative based in Samoa, has increased partnerships with Pacific regional organizations, such as the secretariat of the Pacific Community, the Pacific Islands Forum secretariat, the secretariat of the Pacific Regional Environment Programme and the University of the South Pacific, as well as other United Nations organizations including United Nations Development Programme, World Health Organization and International Fund for Agricultural Development.

57. Pacific small island developing States also receive significant support towards strengthening their fisheries programmes from the Pacific regional organizations. The secretariat of the Pacific Community has focused on scientific research on the development and management of coastal fisheries for all Pacific small island developing States; the Forum Fisheries Agency offers guidance in respect of the economic and policy aspects of offshore tuna fisheries; the secretariat of the Pacific Regional Environment Programme supports initiatives for the protection of marine species and marine biodiversity.

58. The Inter-American Institute for Cooperation on Agriculture is providing a broad range of assistance to Caribbean small island developing States within the framework of the Agro Plan 2003-2015, which details Hemispheric Ministerial Agreements for the development of Agriculture and Rural Life in the Americas. Attention within this framework is being given to the development of competitive enterprises and increased investment in the improvement of rural life; the promotion of innovative types of financial and non-financial services, and risk management in the rural areas; the promotion of increased coordination among farmers, research centres and agricultural services.

59. The Inter-American Institute for Cooperation technical cooperation agenda for the Caribbean combines work in six thematic areas with a view to repositioning agriculture and rural life through the development of viable rural industries: trade and agribusiness development; agricultural health and food safety, technology and innovation, sustainable rural development, education and training; and information and communication. The Alliance for Sustainable Development in Agriculture and the Rural Milieu was created as a forum for Ministers of Agriculture, academia, agribusiness, rural women and youth, to promote a participatory approach and build consensus on policies, strategies and programmes among key stakeholders in the rural sector.

VII. Continuing challenges

60. Greater investment in the rural economy and agriculture sector of small island developing States is required to overcome current trade, economic, environmental and institutional hurdles.

61. The agricultural and infrastructural setbacks brought by natural disasters, sea level rise and the salinization of soil and freshwater due to climate change are among the vicissitudes with which these Member States must inevitably grapple. The support of the international community in their efforts to design and implement appropriate adaptation measures is necessary. Policies and strategies to stem deforestation and watershed and land degradation are also urgently required.

62. The strengthening of land tenure and land titling systems and the development of integrated land management policies are imperative to assure greater equity in land distribution, to strengthen food security and to promote the development and prosperity of the rural economies of small island developing States. In this regard, the strengthening of institutional infrastructure, the preparation of appropriate laws, and creation or strengthening of regulatory mechanisms in support of sustainable land management is required.

63. There is need for greater investment in the development and promotion of rural micro-enterprises, and in enhancing the technological and managerial capacity of agribusinesses and rural enterprises. Training in the promotion of innovative export products, in such areas as packing labelling and brand differentiation, is also needed. These are important precursors for strengthening the productivity, profitability and competitiveness of small island developing States agricultural and rural enterprises.

64. Development of the rural economy will also benefit from the design and implementation of policies promoting stronger intersectoral linkages between agriculture and strong growth sectors such as tourism and fisheries. Programmes and investment initiatives to enhance the participation of women and youth in the rural economy are urgently required.

65. The strengthening of civil society organizations and the promotion of increased interaction among social and economic stakeholders are desirable in fostering a participatory approach to rural development in small island developing States.

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